ABSTRACT

A multilayer optical interference filter having a multiplicity of optical cavities separated by a dielectric reflector stacks to achieve either a very narrow passband region or sharp transition between the passband and reflective region is substantially free of stress to preserve the desired optical performance upon fabrication into miniature discrete filter elements. The substantial stress reduction is achieved by removing the filter from the substrate used in the deposition process in a controlled manner to preserve the structural integrity of the resulting free standing multilayer film structure. The structure can be further bonded or attached to other optical components to suppress a thermal shift in center wavelength without reintroducing stress or interposing a massive substrate in the optical path through the filter.